



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.: P-756 (TI-0022)

Inventors: Huber et al.

Serial No.: 09/770,410

Filing Date: January 25, 2001

Examiner: Therkorn, Ernest G.

Customer No: 26259

Group Art Unit: 1723

Confirmation No: 6186

Title: Method and Apparatus for Separating  
Polynucleotides Using Monolithic  
Capillary Columns

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By Jane Massey Licata  
Typed Name: Jane Massey Licata, Reg. No. 32,257

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

PETITION TO CONSIDER A

REPLACEMENT INFORMATION DISCLOSURE STATEMENT

Petition is hereby made under 37 C.F.R. 1.97(d) requesting  
consideration of this Replacement Information Disclosure  
Statement filed concurrently herewith. This Replacement

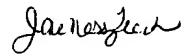
Information Disclosure Statement is being filed because the cited references are missing from the PTO file.

Applicants do not believe any fee is due since this is a Replacement Information Disclosure Statement.

However, authorization to charge deposit account #50-1619 for any fee or credit any overpayment is provided.

This form is submitted in duplicate.

Respectfully submitted,



Jane Massey Licata  
Registration No. 32,257

Date: October 28, 2005

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Commissioner for Patents  
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Sir:

**REPLACEMENT INFORMATION DISCLOSURE STATEMENT**

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. This Replacement Information Disclosure Statement is being filed in accordance with the Examiner's request since the cited references are missing from

the PTO file. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

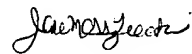
- ( ) In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of the above identified application as set forth in §1.491, or before the mailing date of a first Office Action on the merits of the above-identified application, no additional fee is required.
- ( ) In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, therefore:
  - ( ) Certification in Accordance with §1.97(e) is attached hereto; or
  - ( ) Authorization to charge Deposit Account No. 50-1619 the fee of \$180.00 as set forth in §1.17(p) is provided.
- (XX) This Replacement Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before the payment of the Issue Fee because the cited references are missing from the PTO file.

(XX) Copies of each of the references listed on the attached Form PTO-1449 (modified) are enclosed herewith with the exception of references CN and CV. In view of the voluminous nature of these publications and the likelihood that the Examiner may have a copy available to him or her, a copy has not been included herewith. However, if the Examiner does not have a copy available, Applicant will endeavor to supply one at the Examiner's request.

(XX) Please charge any fee or credit any overpayment to Deposit Account No. 50-1619. This form is submitted in duplicate.

(XX) All listed references are in the English language with the exception of reference CU.

Respectfully submitted,



Jane Massey Licata  
Registration No. 32,257

Date: October 28, 2005

Licata & Tyrrell P.C.  
66 E. Main Street  
Marlton, New Jersey 08053

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<b>Form PTO-1449 Modified</b> List of Patents and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce				Docket No. <b>P-756 (TI-0022)</b>		Serial No. <b>09/770,410</b>	
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OCT 28 2005  
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U. S. PATENT DOCUMENTS						
Examiner Initial	Document No.	Date	Name	Class	Subclass	
	AA	6,238,565	5-29-01	Hatch	210	635
	AB	6,063,589	5-16-00	Kellogg et al.	435	24
	AC	6,024,878	2-15-00	Gjerde et al.	210	635
	AD	5,998,604	12-7-99	Fearon et al.	536	25.4
	AE	5,935,429	8-10-99	Liao et al.	210	198.2
	AF	5,453,185	9-26-95	Frechet et al.	210	198.2
	AG	5,423,513	6-13-95	Chervet et al.	250	277.25
	AH	5,378,334	1-3-95	Dadoo et al.	204	180.1
	AI	5,342,492	8-30-94	Dadoo et al.	204	180.1
	AJ	5,310,463	5-10-94	Dadoo et al.	204	180.1

FOREIGN PATENT DOCUMENTS						
Examiner Initial	Document No.	Date	Country	Translation YES NO		
	AK	WO 00/15778	3-23-00	PCT	X	
	AL	WO 01/55713 A2	8-2-01	PCT	X	
	AM	WO 98/40395	9-17-98	PCT	X	
	AN	WO 90/07965	7-29-90	PCT	X	
	AO	0 597 552 A1	11-12-93	EPO	X	

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>
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## U. S. PATENT DOCUMENTS

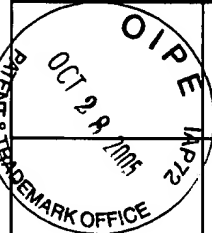
Examiner Initial		Document No.	Date	Name	Class	Subclass
	AP	5,334,310	8-2-94	Frechet et al.	210	198.2
	AQ	5,585,236	12-17-96	Bonn et al.	435	5
	AR	6,355,791	3-12-02	Gjerde et al.	536	25.4
	AS	US02/0017487	2-14-02	Huang	210	635

## FOREIGN PATENT DOCUMENTS

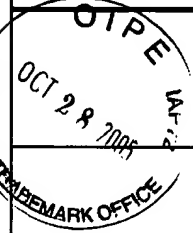
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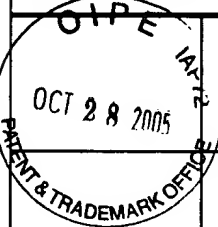
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<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
	BA	Afeyan et al., "Flow-through particles for the high-performance liquid chromatographic separation of biomolecules: perfusion chromatography", Journal of Chromatography 1990 519:1-29	
	BB	Dadoo et al., "Advances Toward the Routine Use of Capillary Electrochromatography", LC-GC 1997 15:630-635	
	BC	Ericson et al., "Preparation of continuous beds for electrochromatography and reversed-phase liquid chromatography of low-molecular-mass compounds", Journal of Chromatography A, 1997 767:33-41	
	BD	Fields, Steven M., "Silica Xerogel as a Continuous Column Support for High-Performance Liquid Chromatography", Anal. Chem. 1996 68:2709-2712	
	BE	Fujimoto et al., "Fritless Packed Columns for Capillary Electrochromatography: Separation of Uncharged Compounds on Hydrophobic Hydrogels", Anal. Chem. 1996 68:2753-2757	
	BF	Fujimoto et al., "Capillary electrochromatography of small molecules in polyacrylamide gels with electroosmotic flow", Journal of Chromatography A, 1995 716:107-113	
	BG	Griffey et al., "Characterization of Oligonucleotide Metabolism In Vivo Liquid Chromatography/Electrospray Tandem Mass Spectrometry with a Quadrupole Ion Trap Mass Spectrometer", J. Mass Spectrom 1997 32:305-313	
	BH	Grim et al., "Capillary LC with Automated On-Line Microfraction Collection Onto Maldi/TOF MS Targets", Int. Biotechnol. Laboratory, October 1997	
	BI	Gusev et al., "Capillary columns with in situ formed porous monolithic packing for micro high-performance liquid chromatography and capillary electrochromatography", Journal of Chromatography A 1999 855:273-290	
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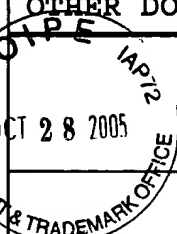


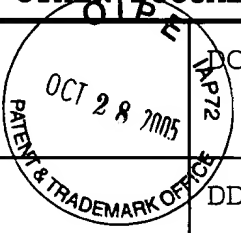
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	BJ	He et al., "Fabrication of Nanocolumns for Liquid Chromatography", Anal. Chem. 1998 70:3790-3797	
	BK	Hirata et al., "Techniques of Capillary Liquid Chromatography", Journal of Chromatography 1979 186:521-528	
	BL	Hjertén et al., "Continuous beds:high-resolving, cost-effective chromatographic matrices", Nature 1992 356:810-811	
	BM	Huang et al., "Capillary zone electrophoresis with fluid-impervious polymer tubing inside a fused-silica capillary", Journal of Chromatography A 1997 788:155-164	
	BN	Huang et al., "Surface-Alkylated Polystyrene Monolithic Columns for Peptide Analysis in Capillary Liquid Chromatograph-Electrospray Ionization Mass Spectrometry", Anal. Chem. 2002 74:2336-2344	
	BO	Huber et al., "On-Line Cation Exchange for Suppression of Adduct Formation in Negative-Ion Electrospray Mass Spectrometry of Nucleic Acids", Anal. Chem. 1998 70:5288-5295	
	BP	Huber et al., "Analysis of Nucleic Acids by Capillary Ion-Pair Reversed-Phase HPLC Coupled to Negative-Ion Electrospray Ionization Mass Spectrometry", Anal. Chem. 1999 71:3730-3739	
	BQ	Huber et al., "Rapid and Accurate Sizing of DNA Fragments by Ion-Pair Chromatography on Alkylated Nonporous Poly(styrene-divinylbenzene) Particles", Anal. Chem. 1995 67:578-585	
BR	Huber et al., "Sheath liquid effects in capillary high-performance liquid chromatography-electrospray mass spectrometry of oligonucleotides", Journal of Chromatography A 2000 870:413-424		
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	BS	Huber et al., "A Comparison of Micropellicular Anion-Exchange and Reversed-Phase Stationary Phases for HPLC Analysis of Oligonucleotides", LC-GC 1996 14:114-127	
	BT	Huber et al., "Mutation detection by capillary denaturing high-performance liquid chromatography using monolithic columns", J. Biochem. Biophys. Methods 2001 47:5-19	
	BU	Ishizuka et al., "Chromatographic Properties of Miniaturized Silica Rod Columns", J. High Resol.. Chromatogr. 1998 21:477-479	
	BV	Jorgenson et al., "High-Resolution Separations Based on Electrophoresis and Electroosmosis", Journal of Chromatography 1981 218:209-216	
	BW	Karlsson, Karl-Erik, "Separation Efficiency of Slurry-Packed Liquid Chromatography Microcolumns with Very Small Inner Diameters", Anal. Chem. 1988 60:1662-1665	
	BX	Kennedy et al., "Preparation and Evaluation of Packed Capillary Liquid Chromatography Columns with Inner Diameters from 20 to 50 $\mu\text{m}$ ", Anal. Chem. 1989 61:1128-1135	
	BY	Novotny Milos V., "Capillary biomolecular separations", Journal of Chromatography B 1997 689:55-70	
	BZ	Martin et al., "A New Form of Chromatogram Employing Two Liquid Phases", Biochem J., 1984 135:1358-1368	
	CA	McGuffin et al., "Nanoliter Injection System for Microcolumn Liquid Chromatography", Anal. Chem. 1983 55:580-583	
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	CB	McLuckey et al., "Tandem Mass Spectrometry of Small, Multiply Charged Oligonucleotides", J Am Soc Mass Spectrom 1992 3:60-70	
	CC	Minakuchi et al., "Octadecylsilylated Porous Silica Rods as Separation Media for Reversed-Phase Liquid Chromatography", Anal. Chem. 1996 68:3498-3501	
	CD	Muddiman et al., "Characterization of PCR Products from Bacilli Using Electrospray Ionization FTICR Mass Spectrometry", Anal. Chem. 1996 68:3705-3712	
	CE	Muddiman et al., "Precise Mass Measurement of a Double-stranded 500 Base-pair (309 kDa) Polymerase Chain Reaction Product by Negative Ion Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry", Rapid Communications in Mass Spectrometry 1999 13:1201-1204	
	CF	Nordhoff et al., "Mass Spectrometry of Nucleic Acids", Mass Spectrometry Reviews 1996 15:67-138	
	CG	Novotny et al., "Recent Advances in Microcolumn Liquid Chromatography", Analytical Chemistry 1988 60(8):500A-510A	
	CH	Oberacher et al., "Preparation and evaluation of packed capillary columns for the separation of nucleic acids by ion-pair reversed-phase high-performance liquid chromatography", Journal of Chromatography A 2000 893:23-35	
	CI	Palm et al., "Macroporous Polyacrylamide/Poly(ethylene glycol) Matrixes as Stationary Phases in Capillary Electrochromatography", Anal. Chem. 1997 69:4499-4507	
	CJ	Peters et al., "Molded Rigid Polymer Monoliths as Separation Media for Capillary Electrochromatography", Anal. Chem. 1997 69:3646-3649	
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	CK	Peters et al., "Molded Rigid Polymer Monoliths as Separation Media for Capillary Electrochromatography. 2. Effect of Chromatographic Conditions on the Separation", Anal. Chem. 1998 70:2296-2302	
	CL	Petro et al., "Molded Monolithic Rod of Macroporous Poly(styrene-co-divinylbenzene) as a Separation Medium for HPLC of Synthetic Polymers: "On-Column" Precipitation-Redissolution Chromatography as an Alternative to Size Exclusion Chromatography of Styrene Oligomers and Polymers", Anal. Chem. 1996 68:315-321	
	CM	Petro et al., Molded continuous Poly(styrene-co-divinylbenzene) rod as a separation medium for the very fast separation of polymers Comparison of the chromatographic properties of the monolithic rod with columns packed with porous and non-porous beads in high-performance liquid chromatography of polystyrenes", Journal of Chromatography A 1996 752:59-66	
	CN	Poole et al., Chromatography Today, Elsevier, Amsterdam 1995	
	CO	Potier et al., "Negative electrospray ionization mass spectrometry of synthetic and chemically modified oligonucleotides", Nucleic Acids Research 1994 22(19):3895-3903	
	CP	Premstaller et al., "High-Performance Liquid Chromatograph-Electrospray Ionization Mass Spectrometry of Single-and Double-Stranded Nucleic Acids Using Monolithic Capillary Columns", Anal. Chem. 2000 72:4386-4393	
	CQ	Pretorius et al., "Electro-Osmosis - A New Concept for High-Speed Liquid Chromatography", Journal of Chromatography 1974 99:23-30	
	CR	Rathore et al., "Separation parameters via virtual migration distances in high-performance liquid chromatography, capillary zone electrophoresis and electrokinetic chromatography", Journal of Chromatography A 1996 743:231-246	
	CS	Rodrigues et al., "Peak resolution in linear chromatography - Effects of intraparticle convection", Journal of Chromatography A 1993 653:189-198	
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	CT	Scott et al., "Determination of the Extra Column Dispersion Occurring in the Different Components of a Chromatographic System", Journal of Chromatographic Science 1982 20:62-66	
	CU	Seidl et al., "Makroporöse Styrol-Divinylbenzol-Copolymere und ihre Verwendung in der Chromatographie und zur Darstellung von Ionenaustauschern", Adv. Polymer Sci. 1967 5:113-213	
	CV	Snyder et al., Practical HPLC Method Development Eds., John Wiley & Sons, New York 1997	
	CW	Stults et al., "Improved Electrospray Ionization of Synthetic Oligodeoxynucleotides", Rapid Communications in Mass Spectrometry 1991 5:359-363	
	CX	Suck et al., "The Structure of a Trinucleoside Diphosphate:Adenylyl-(3',5')-adenylyl-(3',5')-adenosine Hexahydrate", Acta Cryst. 1976 B32:1727-1737	
	CY	Svec et al., "Temperature, a Simple and Efficient Tool for the Control of Pore Size Distribution in Macroporous Polymers", Macromolecules 1995 28:7580-7582	
	CZ	Takeuchi et al., "Continuous Gradient Elution in Micro High-Performance Liquid Chromatography", Journal of Chromatography 1982 253:41-47	
	DA	Viklund et al., "'Molded" Macroporous Poly(glycidyl methacrylate-co-trimethylolpropane trimethacrylate) Materials with Fine Controlled Porous Properties: Preparation of Monoliths Using Photoinitiated Polymerization", Chem. Mater. 1997 9:463-471	
DB	Tomer et al., "Packed Capillary Columns", Capillary Liquid Chromatography/Mass Spectrometry, Mass Spectrometry Reviews 1994 13:431-457		
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	DC	Viklund et al., "Monolithic, "Molded", Porous Materials with High Flow Characteristics for Separations, Catalysis, or Solid-Phase Chemistry:Control of Porous Properties during Polymerization", Chem. Mater. 1996 8:744-750	
	DD	Wang et al., "Polymeric Porogens Used in the Preparation of Novel Monodispersed Macroporous Polymeric Separation Media for High-Performance Liquid Chromatography" Anal. Chem. 1992 64:1232-1238	
	DE	Xiao et al., "Multiplex Capillary Denaturing High-Performance Liquid Chromatography with Laser-Induced Fluorescence Detection", BioTechniques 2001 30:1332-1338	
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